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TUMORS OF GROUND SQUIRRELS (CITELLUS BEECHEYI).*

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In the course of the examination of ground squirrels at the Federal Plague Laboratory at San Francisco, California, for the purpose of detecting plague infection, several tumors have been observed which will be described briefly in this paper.

New growths evidently occur much less frequently in these rodents than in rats, the experience[1] being that a neoplasm is found about once in each 1,000 rats, while only eight tumors were found among 250,000 ground squirrels, or but one in over 30,000 animals. A few other growths were found, the gross appearances of which led us to regard them as tumors but which the microscopical examination relegated to the group of granulomata.

Sections of the growths were submitted to Professor Wm. J. Ophuls, of the Department of Pathology of Leland Stanford Junior University, who kindly gave me the benefit of his large experience in tumor work and furnished me with notes on which the histological diagnoses are based chiefly.

TUMORS OF THE SUBCUTANEOUS TISSUE.

Lipoma.—Grown; female. A well-defined, flattened, oval, fatty mass just under the skin on the left side midway between the axilla and the groin. Dimensions, 0.5×1×2 cm.

The sections showed nothing beyond the loose connective tissue stroma which formed the supporting structure of fatty tissue.

Fibro-sarcoma.—Grown; female. A firm, grayish-white growth in the subcutaneous tissue of the inguinal region. Dimensions, 2×3×4 cm.

The microscopical examination showed a fibrous stroma with an abundance of round cells. The cells are fairly uniform in size

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*Received for publication September 14, 1913.

[1] McCoy, *Jour. Med. Research*, 1909, 21, p. 285; Woolley and Wherry, *ibid.*, 1911, 25, p. 205.

and shape. The border of the growth merges into the connective tissue of the part.

TUMOR OF MEDIASTINUM.

Sarcoma.—Grown; female. A soft, almost diffluent, pinkish-white mass, which probably springs from the thymus, occupies the whole anterior mediastinum.

The growth is made up of round nuclei with merely a suggestion of connective tissue formation in some parts and in others a well-defined but loose, irregular, fibrous tissue network. Well-defined blood vessels are lacking. There is no trace of Hassel's corpuscles tho they are present in abundance in control tissue (thymus) from normal squirrels.

TUMORS OF LIVER.

Adenoma.—Grown; female. The liver presents two firm, lobulated, buff-colored masses each about 0.5×1×2 cm., and another mass of the same nature but only about the size of a pea. The growths project abruptly from the general contour of the liver.

The growth is made up of epithelial cells like those of the liver, except that they are larger, irregular in shape and size, and lack the regular arrangement of liver cells. In portions the growth appears to be marked off from the liver structure by a band of connective tissue rich in cells.

Adenoma.[1]—Grown; female. The lower surface of the liver presents a reddish growth about 4 cm. in diameter.

This growth is much more atypical than the preceding one. The cells are larger and more irregular than in the first case. Large blood spaces are present, some of which lack well-defined walls. Portions of the growth show degenerative change, probably fatty in nature.

TUMOR OF KIDNEY.

Sarcoma (angio-sarcoma?).—Grown; female. Springing from the inner and front surface of the right kidney is a soft, whitish mass about 2.5×3.5 cm. The growth shows reddish streaks. The kidney tissue presents no gross evidence of disease. The growth is made up of a delicate framework filled with round or oval nuclei. In places large capillary vessels lie in the center of cellular masses.

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[1] The diagnosis of *angioma* might be justified almost equally well in this case.

TUMORS OF FEMALE GENITALIA.

Sarcoma (alveolar).—Grown; female. A grayish-white, lobulated growth apparently springing from the right ovary or from the extremity of the right division of the uterus. The growth is tough with a tendency to softening in the center.

Microscopically this growth presents a fibrous, somewhat cellular framework with nests of mononuclear cells.

Sarcoma (alveolar).—Grown; female. A grayish-white, lobulated mass at the distal end of the right horn of the uterus. The growth is firm, fleshy, and cuts readily. Dimensions, 1×2×4 cm.

This growth resembles the preceding one. The framework is less cellular. The structure is very vascular.

SUMMARY.

Eight neoplasms were found in 250,000 ground squirrels (*Citellus beecheyi*).

The tumors were all found in females.

The microscopic diagnoses and the location of the growths were as follows:

1 lipoma in the subcutaneous tissue;
1 fibro-sarcoma in the subcutaneous tissue;
1 sarcoma of mediastinum;
1 sarcoma of kidney;
2 sarcomas of female genitalia (internal);
2 adenomas of liver.